**Name:**

**NEWTON’S LAWS WORKSHEET**

**I. NEWTON’S FIRST LAW OF MOTION**

1. Newton’s first law of motion is also known as the LAW OF **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
2. Newton’s first law says that
3. an object that IS NOT MOVING, or is at **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** will stay at **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_AND**
4. an object that IS MOVING will keep moving with constant **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** which means at the same **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and in the same **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_UNLESS**
5. an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** force acts on that object.
6. What is inertia?

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What property of an object determines how much inertia it has?
2. Which of the following has more inertia?
   1. Bowling ball or Tennis ball
   2. Hammer or Feather
3. When traveling in a car and turning to the right, which way does your body go and why?

**II. NEWTON’S SECOND LAW OF MOTION**

1. Newton’s second law of motion is also known as the LAW OF **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. Newton’s second law says that when an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** force is applied to a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** it causes it to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
3. The greater the force that is applied, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the acceleration.
4. The lesser the force that is applied, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the acceleration.
5. If the same force is applied to an object with a large mass, it will have a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**acceleration.
6. If the same force is applied to an object with a small mass, it will have a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** acceleration.
7. The equation that is used to solve second law problems is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   1. What does each of the variables mean?

F = **\_\_\_\_\_\_\_\_\_\_\_\_** m = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** a = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

b. What **unit** of measurement must be used with each variable?

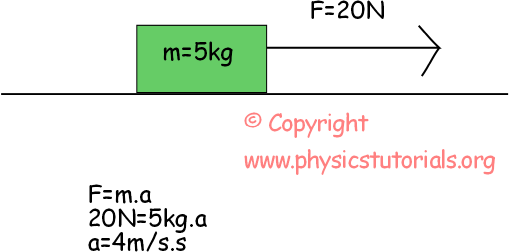
F = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** m = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** a = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**III. NEWTON’S THIRD LAW OF MOTION**

1. Newton’s third law of motion is also known as the LAW OF **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. Newton’s third law says that every time there is an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** force, there is also a **\_\_\_\_\_\_\_\_\_\_\_\_\_** force that is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**in size and acts in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** direction.
3. Newton’s third law states that forces must ALWAYS occur in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
4. Listed below are ACTION forces. **Tell the REACTION force.**
   1. Your bottom pushing on your desk seat: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   2. A bat hitting a baseball: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
5. Your finger pressing on your phone screen while texting: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
6. What is friction?
7. Factors that affect the amount of friction against an object are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
8. The factors that affect gravitational pull on an object are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
9. Define mass:
10. Define weight:
11. What is acceleration due to gravity constant? Include units. (numeric value)
12. A) What would you observe if you drop a cotton ball and a rock at the same time? B) Would it be different if you did the same occur if performed in a vacuum tube? Explain your answer.
13. True or False: Your mass would be the same on the Moon as it is on the Earth. Explain your answer in complete sentences.
14. True or False: Your weight would be the same on the Moon as it is on the Earth. Explain your answer in complete sentences.
15. What happens to the gravitational pull between two bodies when the distance between them increases?

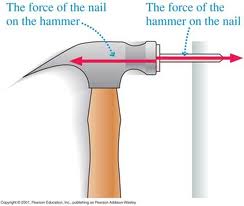
**IV. UNDERSTANDING…..**

Label each of the following images/descriptions below as being examples of 1st, 2nd, or 3rd law. Then EXPLAIN your answer!



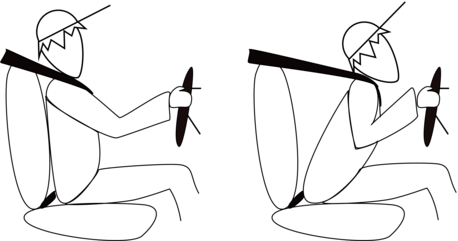
1st law 2nd law 3rd law

Explanation:



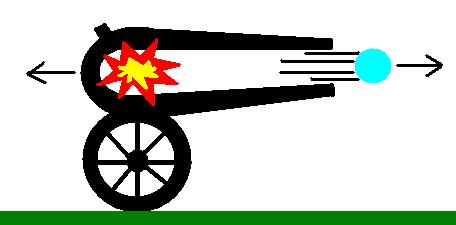
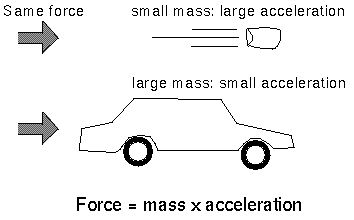
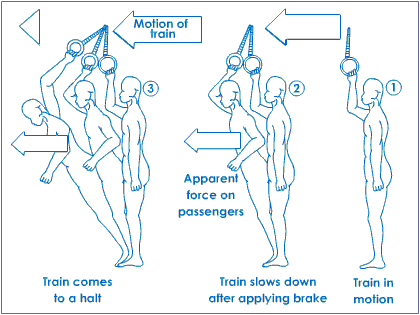
1st law 2nd law 3rd law

Explanation:



1st law 2nd law 3rd law

Explanation:



1st law 2nd law 3rd law

Explanation:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1st law 2nd law 3rd law

Explanation:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1st law 2nd law 3rd law

Explanation:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_